

HYDRAULIC MOTORS HR



APPLICATION

- Conveyors
- Feeding mechanism of robots and manipulators
- Metal working machines
- Textile machines
- Machines for agriculture
- Food industries
- Wood working and sawmill machinery etc.



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OPTIONS

- Model- Spool valve, roll-gerotor
- Flange mount
- Side ports
- Shafts- straight, splined and tapered
- SAE, Metric and BSPP ports
- Speed sensing
- Other special features

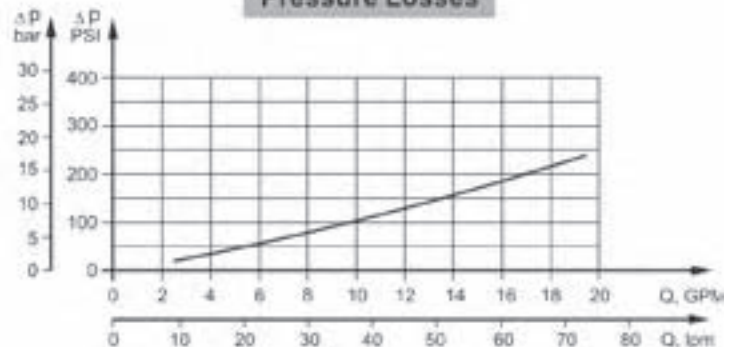
GENERAL

| | | |
|---|--|---|
| Displacement, | in ³ /rev [cm ³ /rev.] | 3.14+24.4 [51,5+397] |
| Max. Speed, | [RPM] | 185 1000 |
| Max. Torque, | in-lb [daNm] | 900+4250 [10,1+48] |
| Max. Output, | HP [kW] | 6+11 [4,5+8,2] |
| Max. Pressure Drop, | PSI [bar] | 1305+2030 [90+140] |
| Max. Oil Flow, | GPM [lpm] | 16 [60,6] |
| Min. Speed, | [RPM] | 10 |
| Pressure fluid | | Mineral based- HLP(DIN 51524) or HM(ISO 6743/4) |
| Temperature range, | °F [°C] | -22+194 [-30 90] |
| Optimal Viscosity range, SUS [mm ² /s] | | 98+347 [20 75] |
| Filtration | | ISO code 20/16 (Min. recommended fluid filtration of 25 micron) |

Oil flow in drain line

| Pressure drop PSI [bar] | Viscosity SUS [mm ² /s] | Oil flow in drain line GPM [lpm] |
|----------------------------|---------------------------------------|--|
| 1450 [100] | 98 [20] | .660 [2,5] |
| | 164 [35] | .476 [1,8] |
| 2030 [140] | 98 [20] | .925 [3,5] |
| | 164 [35] | .740 [2,8] |

Pressure Losses



SPECIFICATION DATA

| Type | | HR 50 | HR 80 | HR 100 | HR 125 | HR 160 | HR 200 | HR 250 | HR 315 | HR 4 |
|---|--------------------------|-------------|-------------|-------------|--------------|--------------|---------------|---------------|---------------|---------------|
| Displacement, in. ³ /rev. [cm. ³ /rev.] | | 3.14 [51,5] | 4.90 [80,3] | 6.09 [99,8] | 7.67 [125,7] | 9.74 [159,6] | 12.19 [199,8] | 15.26 [250,1] | 19.26 [315,7] | 24.23 [398,1] |
| Max. Speed, [RPM] | Cont. | 734 | 750 | 600 | 475 | 375 | 300 | 240 | 190 | 150 |
| | Int.* | 1029 | 940 | 750 | 600 | 470 | 375 | 300 | 240 | 191 |
| Max. Torque in-lb [daNm] | Cont. | 900 [10,1] | 1390 [15,7] | 1750 [19,8] | 2210 [25,0] | 2830 [32,0] | 3045 [34,4] | 3540 [40,0] | 3850 [43,5] | 4250 [48,0] |
| | Int.* | 1150 [13] | 1725 [19,5] | 2125 [24,0] | 2655 [30,0] | 3450 [39,0] | 3450 [39,0] | 4160 [47,0] | 4515 [51,0] | 4870 [55,0] |
| Max. Output HP [kW] | Cont. | 9.3 [6,9] | 14 [10,5] | 14 [10,5] | 14 [10,5] | 13.7 [10,2] | 12.6 [9,4] | 10.7 [8] | 8.7 [6,5] | 8.2 [6] |
| | Int.* | 13.4 [10] | 20.1 [15] | 20.1 [15] | 20.1 [15] | 18.8 [14] | 16.7 [14] | 15.4 [11,5] | 12.1 [9] | 11 [8] |
| Max. Pressure Drop PSI [bar] | Cont. | 2030 [140] | 2030 [140] | 2030 [140] | 2030 [140] | 2030 [140] | 1810 [125] | 1595 [110] | 1450 [100] | 1305 [90] |
| | Int.* | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2250 [155] | 2030 [140] | 1810 [125] | 1520 [110] |
| Max. Oil Flow GPM [lpm] | Cont. | 10 [37,8] | 16 [60,6] | 16 [60,6] | 16 [60,6] | 16 [60,6] | 16 [60,6] | 16 [60,6] | 16 [60,6] | 16 [60] |
| | Int.* | 14 [53] | 20 [75,7] | 20 [75,7] | 20 [75,7] | 20 [75,7] | 20 [75,7] | 20 [75,7] | 20 [75,7] | 20 [75] |
| Max. Inlet Pressure PSI [bar] | Cont. | 2030 [140] | 2030 [140] | 2030 [140] | 2030 [140] | 2030 [140] | 2030 [140] | 2030 [140] | 2030 [140] | 2030 [140] |
| | Int.* | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] |
| | Peak** | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] |
| Max. Return Pressure without Drain Line or Max. Pressure in Drain Line, PSI [bar] | Cont. 0-100 RPM | 2200 [150] | 2200 [150] | 2200 [150] | 2200 [150] | 2200 [150] | 2200 [150] | 2200 [150] | 2200 [150] | 2200 [150] |
| | Cont. 100-300 RPM | 1100 [75] | 1100 [75] | 1100 [75] | 1100 [75] | 1100 [75] | 1100 [75] | 1100 [75] | 1100 [75] | 1100 [75] |
| | Cont. 300-600 RPM | 725 [50] | 725 [50] | 725 [50] | 725 [50] | 725 [50] | 725 [50] | - | - | - |
| | Cont. >600 RPM | 365 [25] | 365 [25] | 365 [25] | - | - | - | - | - | - |
| | Int.* 0-max. RPM | 1800 [124] | 1800 [124] | 1800 [124] | 1800 [124] | 1800 [124] | 1800 [124] | 1800 [124] | 1800 [124] | 1800 [124] |
| Max. Return Pressure with Drain Line, PSI [bar] | Cont. | 2030 [140] | 2030 [140] | 2030 [140] | 2030 [140] | 2030 [140] | 2030 [140] | 2030 [140] | 2030 [140] | 2030 [140] |
| | Int.* | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] |
| | Peak** | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] |
| Max. Starting Pressure with Unloaded Shaft, PSI [bar] | | 145 [10] | 145 [10] | 145 [10] | 130 [9] | 102 [7] | 73 [5] | 58 [4] | 44 [3] | 44 [3] |
| Min. Starting Torque in-lb [daNm] | At max.press. drop Cont. | 710 [8] | 1060 [12] | 1420 [16] | 1770 [20] | 2270 [25,6] | 2620 [29,5] | 2510 [28,3] | 2840 [32] | 3170 [36] |
| | At max.press. drop Int.* | 885 [10] | 1310 [14,8] | 1780 [20,1] | 1930 [21,8] | 2860 [32,3] | 3150 [35,5] | 3400 [38,4] | 4580 [51,7] | 4040 [46] |
| Min. Speed***, [RPM] | | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Weight, lb [kg] | HR | 14.56 [6,6] | 14.77 [6,7] | 15.44 [7,0] | 15.66 [7,1] | 16.10 [7,3] | 17.20 [7,8] | 18.10 [8,2] | 19.62 [8,9] | 21.17 [9,6] |
| | HRQ | 13.23 [6,0] | 13.45 [6,1] | 14.11 [6,4] | 14.33 [6,5] | 14.77 [6,7] | 15.88 [7,2] | 16.76 [7,6] | 18.30 [8,3] | 19.85 [9,0] |

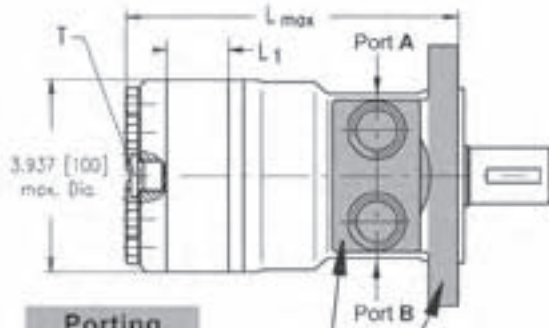
* Intermittent operation: the permissible values may occur for max. 10% of every minute.

** Peak load: the permissible values may occur for max. 1% of every minute.

*** For speeds of 10 RPM or lower, consult factory or your regional manager.

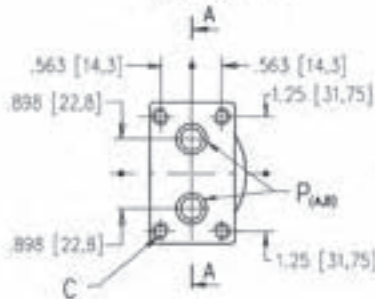
- Intermittent speed and intermittent pressure drop must not occur simultaneously.
- Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
- Recommend using a premium quality, anti-wear type mineral based hydraulic oil HLP(DIN51524) or HM (ISO 6743/4). If using synthetic fluids consult the factory for alternative seal materials.
- Recommended minimum oil viscosity 70 SUS [13 mms/s] at 122°F [50°C].
- Recommended maximum system operating temperature is 180°F [82°C].
- To assure optimum motor life fill with fluid prior to loading and run at moderate load and speed for 10-15 minutes.

DIMENSIONS AND MOUNTING DATA FOR HR

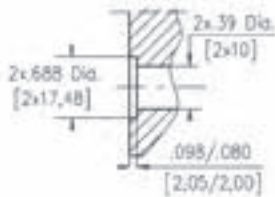


Porting

**Side Ports
Version 1**

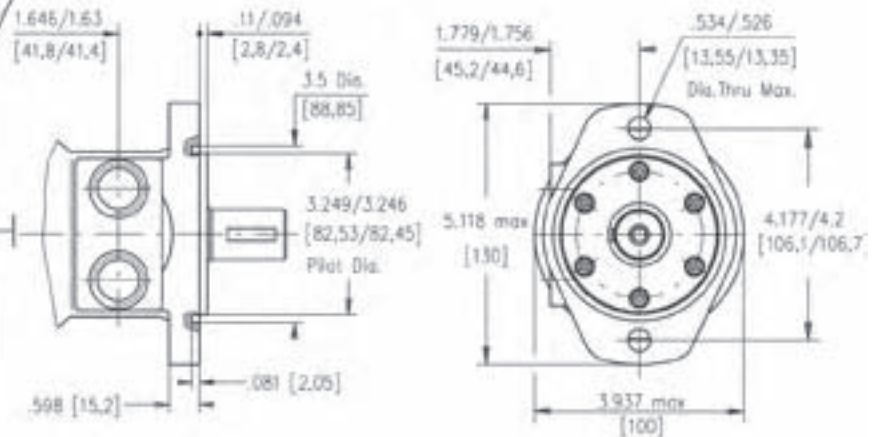


A-A

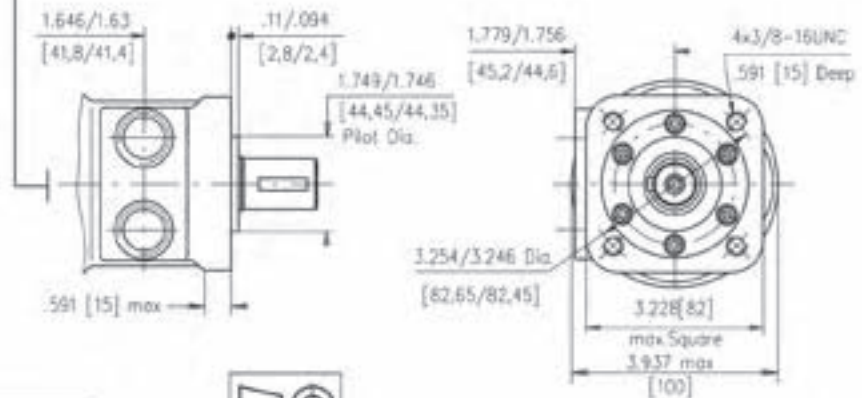


Mounting

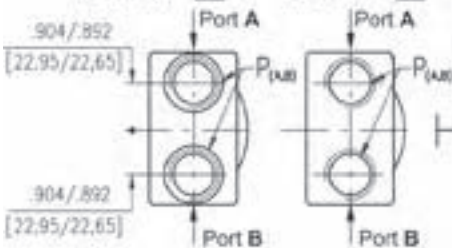
SAE A Flange



Q Square Flange



Version 4 Version 5



| Type | L _{max} , in. [mm] | L, in. [mm] |
|-----------|-----------------------------|-------------|
| HR(Q) 50 | 5.41 [137,5] | .35 [9,0] |
| HR(Q) 80 | 5.61 [142,5] | .55 [14,0] |
| HR(Q) 100 | 5.74 [146,0] | .69 [17,4] |
| HR(Q) 125 | 5.92 [150,3] | .86 [21,8] |
| HR(Q) 160 | 6.15 [156,3] | 1.09 [27,8] |
| HR(Q) 200 | 6.43 [163,3] | 1.37 [34,8] |
| HR(Q) 250 | 6.77 [172,0] | 1.71 [43,5] |
| HR(Q) 315 | 7.22 [183,3] | 2.16 [54,8] |
| HR(Q) 400 | 7.79 [198,0] | 2.73 [69,4] |



Standard Rotation

Viewed from Shaft End
Port A Pressurized - CW
Port B Pressurized - CCW

Reverse Rotation

Viewed from Shaft End
Port A Pressurized - CCW
Port B Pressurized - CW

| | Versions | | |
|--------------------------|-------------------|--------------|--------------|
| | 1 | 4 | 5 |
| C | 4x 3/8-18UNC | - | - |
| P_(A,B) | 2x .39 Dia [2x10] | 2x 1/4-14UNF | 2x Ω -14NPTF |
| T | 1/4 -20UNF | 1/4 -20UNF | 1/4 -20UNF |

ORDER CODE

| | | | | | | | | | |
|-----------|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| HR | | | | | | | | | |

Pos. 1 - Mounting Flange

omit - SAE A, two holes

Q - Square, four bolts

Pos. 2 - Displacement code [performance data see pages 48-52]

- 50** - 3.14 [51,5] in.³/rev. [cm.³/rev.]
- 80** - 4.90 [80,3] in.³/rev. [cm.³/rev.]
- 100** - 6.09 [99,8] in.³/rev. [cm.³/rev.]
- 125** - 7.67 [125,7] in.³/rev. [cm.³/rev.]
- 160** - 9.74 [159,6] in.³/rev. [cm.³/rev.]
- 200** - 12.19 [199,8] in.³/rev. [cm.³/rev.]
- 250** - 15.26 [250,1] in.³/rev. [cm.³/rev.]
- 315** - 19.26 [315,7] in.³/rev. [cm.³/rev.]
- 400** - 24.23 [397,0] in.³/rev. [cm.³/rev.]

Pos. 3 - Shaft Extensions* [see page 38]

- C** - 1" [25,4] straight, Woodruff key
- G** - 1" [25,4] SAE 6B Splined
- H** - 1" [25,4] straight, w/.315 [8] Crosshole
- S** - 7/8" [22,2] 13T Splined
- T** - 1" [25,4] SAE J501 Tapered

Pos. 4 - Port Size/Type [standard manifold to each]

- 1** - side ports, Manifold [5/16-18 UNC Mounting Threads], 7/16-20 UNF
- 4** - side ports, 2x7/8-14 UNF, O-ring, 7/16-20 UNF
- 5** - side ports, 2x1/2-14 NPTF, 7/16-20 UNF

Pos. 5 - Speed Monitoring [See Page 39]

- omit - none
- RS-P** - with speed sensor (PNP pull-down resistor)
- RS-N** - with speed sensor (NPN pull-up resistor)

Pos. 6 - Special Features [See Specification Data on Page 47]

- omit - none
- LL** - Low Leakage
- LSV** - Low Speed Valve
- FR** - Free Running

Pos. 7 - Rotation

- omit - Standard Rotation
- R** - Reverse Rotation

Pos. 8 - Option [Paint]**

- omit - no Paint
- P** - Painted
- PC** - Corrosion Protected Paint

Pos. 9 - Design Series

- omit - Factory specified

Notes : * The permissible output torque for shafts must be not exceeded!
 ** Color at customer's request.

The hydraulic motors are mangano phosphatized as standard.

HYDRAULIC MOTORS MLHPL



APPLICATION

- » Conveyors
- » Feeding mechanism of robots and manipulators
- » Metal working machines
- » Textile machines
- » Machines for agriculture
- » Food industries
- » Mining machinery etc.



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OPTIONS

- » Model- Spool valve, gerotor
- » Antifriction conical bearings
- » Flange mount
- » Shafts- straight, splined and tapered
- » SAE, Metric and BSPP ports
- » Other special features

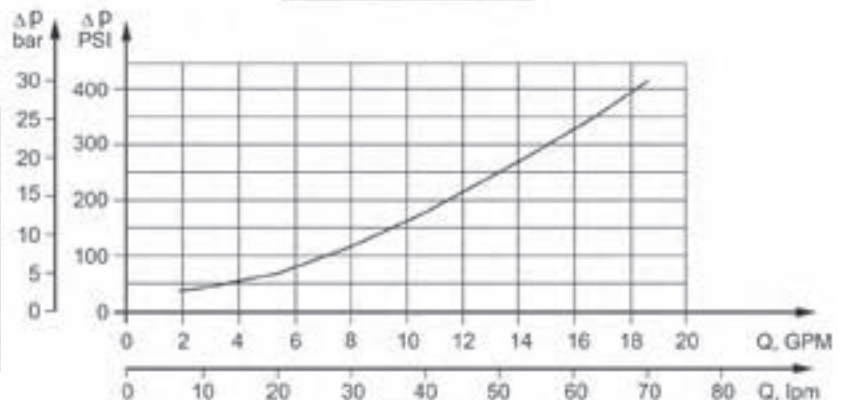
GENERAL

| | | |
|---|--|---|
| Displacement, | in ³ /rev [cm ³ /rev.] | 1.52+38.5 [49,5+396] |
| Max. Speed, | [RPM] | 150+1210 |
| Max. Torque, | in-lb [daNm] | 290+4415 [3,3+50] |
| Max. Output, | HP [kW] | 4.4+14.1 [9,9+11,7] |
| Max. Pressure Drop, | PSI [bar] | 800+2030 [95+140] |
| Max. Oil Flow, | GPM [lpm] | 16 [60] |
| Min. Speed, | [RPM] | 10 |
| Pressure fluid | | Mineral based- HLP(DIN 51524) or HM(ISO 6743/4) |
| Temperature range, | °F [°C] | -22+194 [-30+90] |
| Optimal Viscosity range, SUS [mm ² /s] | | 98+347 [20+75] |
| Filtration | | ISO code 20/16 (Min. recommended fluid filtration of 25 micron) |

Oil flow in drain line

| Pressure drop PSI [bar] | Viscosity SUS [mm ² /s] | Oil flow in drain line GPM [lpm] |
|----------------------------|---------------------------------------|--|
| 1450 [100] | 98 [20] | .660 [2,5] |
| | 164 [35] | .476 [1,8] |
| 2030 [140] | 98 [20] | .925 [3,5] |
| | 164 [35] | .740 [2,8] |

Pressure Losses



SPECIFICATION DATA

| Type | MLHPL 50 | MLHPL 80 | MLHPL 100 | MLHPL 125 | MLHPL 160 | MLHPL 200 | MLHPL 250 | MLHPL 315 | MLHPL 400 | |
|--|------------------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|
| Displacement, in.³/rev. [cm.³/rev.] | 3.02 [49.5] | 4.83 [79.2] | 6.04 [99] | 7.55[123.8] | 9.66[158.4] | 12.1 [198] | 15.1[247.5] | 19.3[316.8] | 24.16[396] | |
| Max. Speed, [RPM] | Cont. | 1210 | 755 | 605 | 485 | 378 | 303 | 242 | 150 | |
| | Cont. for "LSV" motors | 200 | 200 | 200 | 200 | 200 | 200 | 190 | 150 | |
| | Int.* | 1515 | 945 | 755 | 605 | 472 | 378 | 303 | 236 | |
| | Int. for "LSV" motors* | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 236 | |
| Max. Torque in-lb [daNm] | Cont. | 832 [9.4] | 1336 [15.1] | 1708 [19.3] | 2100 [23.7] | 2770 [31.3] | 3240 [36.6] | 4160 [47] | 4300 [48.6] | 4425 [50] |
| | Cont. for "LL" motors | 800 [9] | 1275 [14.4] | 1630 [18.4] | 1990 [22.5] | 2340 [26.4] | 3080 [34.8] | 3950 [44.6] | 4090 [46.2] | 4205 [47.5] |
| | Int.* | 1054 [11.9] | 1725 [19.5] | 2097 [23.7] | 2637 [29.8] | 3345 [37.8] | 4035 [45.6] | 5160 [58.3] | 4956 [56] | 5222 [59] |
| | Int. for "LL" motors* | 1000 [11.3] | 1640 [18.5] | 1990 [22.5] | 2505 [28.3] | 3190 [36] | 3835 [43.3] | 4905 [55.4] | 4710 [53.2] | 4960[56] |
| | Peak** | 1240 [14.0] | 1947 [22.0] | 2390 [27.0] | 3230 [36.5] | 3717 [42] | 4700 [53] | 5930 [67] | 7523 [85] | 7560 [85.4] |
| Max. Output HP [kW] | Cont. | 13.3 [9.9] | 13.3 [9.9] | 13.3 [9.9] | 13.3 [9.9] | 15.7 [11.7] | 13.8 [10.3] | 13.1 [9.8] | 10.2 [7.6] | 8.9 [6.6] |
| | Int.* | 16.8 [12.5] | 16.8 [12.5] | 16.8 [12.5] | 16.8 [12.5] | 16.8 [12.5] | 20.8 [15.5] | 23.5 [17.5] | 11 [8.2] | 12.3 [9.2] |
| Max. Pressure Drop PSI [bar] | Cont. | 2030 [140] | 2030 [140] | 2030 [140] | 2030 [140] | 2030 [140] | 2030 [140] | 2030 [140] | 1300 [120] | 1015 [95] |
| | Int.* | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2030 [140] | 1665 [115] |
| | Peak** | 3260 [225] | 3260 [225] | 3260 [225] | 3260 [225] | 3260 [225] | 3260 [225] | 3260 [225] | 3260 [225] | 2610 [180] |
| Max. Oil Flow GPM [lpm] | Cont. | 16 [60] | 16 [60] | 16 [60] | 16 [60] | 16 [60] | 16 [60] | 16 [60] | 16 [60] | |
| | Cont. for "LSV" motors | 2.6 [10] | 4.2 [16] | 5 [20] | 6.6 [25] | 8.5 [32] | 11 [40] | 13 [50] | 16 [60] | 16 [60] |
| | Int.* | 20 [75] | 20 [75] | 20 [75] | 20 [75] | 20 [75] | 20 [75] | 20 [75] | 20 [75] | 20 [75] |
| | Int. for "LSV" motors* | 3.3 [12.5] | 5 [20] | 6.6 [25] | 8.5 [32] | 11 [40] | 13 [50] | 16.5 [62.5] | 20 [75] | 20 [75] |
| Max. Inlet Pressure PSI [bar] | Cont. | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | |
| | Int.* | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] | |
| | Peak** | 3260 [225] | 3260 [225] | 3260 [225] | 3260 [225] | 3260 [225] | 3260 [225] | 3260 [225] | 3260 [225] | |
| Max. Return Pressure without Drain Line or Max. Pressure in Drain Line, PSI [bar] | Cont. 0-100 RPM | 1450 [100] | 1450 [100] | 1450 [100] | 1450 [100] | 1450 [100] | 1450 [100] | 1450 [100] | 1450 [100] | |
| | Cont. 100-300 RPM | 725 [50] | 725 [50] | 725 [50] | 725 [50] | 725 [50] | 725 [50] | 725 [50] | 725 [50] | |
| | Cont. 300-600 RPM | 365 [25] | 365 [25] | 365 [25] | 365 [25] | 365 [25] | 365 [25] | 365 [25] | 365 [25] | |
| | Cont. >600 RPM | 220 [15] | 220 [15] | 220 [15] | 220 [15] | 220 [15] | 220 [15] | 220 [15] | 220 [15] | |
| | Int.* 0-max. RPM | 1450 [100] | 1450 [100] | 1450 [100] | 1450 [100] | 1450 [100] | 1450 [100] | 1450 [100] | 1450 [100] | |
| Max. Return Pressure with Drain Line PSI [bar] | Cont. | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | 2540 [175] | |
| | Int.* | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] | 2900 [200] | |
| | Peak** | 3260 [225] | 3260 [225] | 3260 [225] | 3260 [225] | 3260 [225] | 3260 [225] | 3260 [225] | 3260 [225] | |
| Max. Starting Pressure with Unloaded Shaft, PSI [bar] | | 145 [10] | 145 [10] | 145 [10] | 131 [9] | 116 [8] | 100 [7] | 87 [6] | 73 [5] | 73 [5] |
| | for "LSV" motors | 1770 [20] | 1770 [20] | 1770 [20] | 1770 [20] | 1330 [15] | 1330 [15] | 1330 [15] | 1065 [12] | 1065 [12] |
| | for "FR" motors | 116 [8] | 116 [8] | 116 [8] | 109 [7.5] | 94 [6.5] | 80 [5.5] | - | - | - |
| Min. Starting Torque in-lb [daNm] | 681 [7.7] | 1150 [13] | 1487 [16.8] | 1860 [21.0] | 2478 [28.0] | 2650 [32.2] | 3665 [41.4] | 3805 [43.0] | 3900 [44.0] | |
| Min. Speed***, [RPM] | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| Weight, lb [kg] | 18.5 [8.4] | 18.7 [8.5] | 19.4 [8.8] | 19.6 [8.9] | 20 [9.1] | 20.9 [9.5] | 22 [10.0] | 23.6 [10.7] | 25.1 [11.4] | |

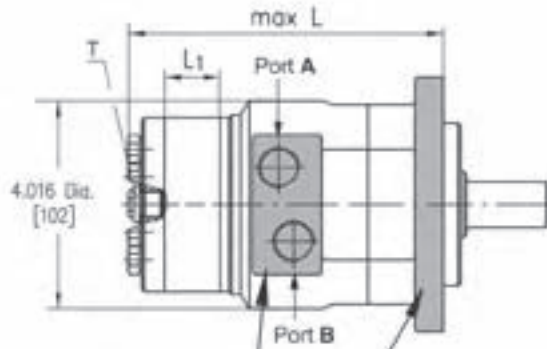
* Intermittent operation: the permissible values may occur for max. 10% of every minute.

** Peak load: the permissible values may occur for max. 1% of every minute.

*** For speeds of 10 RPM or lower, consult factory or your regional manager.

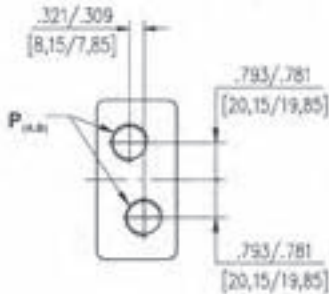
- Intermittent speed and intermittent pressure drop must not occur simultaneously.
- Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
- Recommend using a premium quality, anti-wear type mineral based hydraulic oil HLP(DIN51524) or HM (ISO 6743/4).
If using synthetic fluids consult the factory for alternative seal materials.
- Recommended minimum oil viscosity 70 SUS [13 mm²/s] at 122°F [50°C].
- Recommended maximum system operating temperature is 180°F [82°C].
- To assure optimum motor life fill with fluid prior to loading and run at moderate load and speed for 10-15 minutes.

DIMENSIONS AND MOUNTING DATA

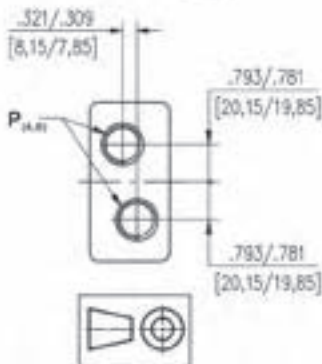


Porting

Side Ports
Version **2** **5**

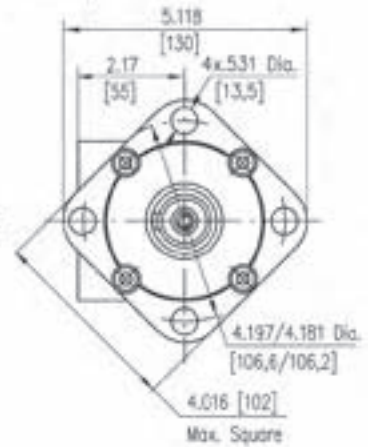
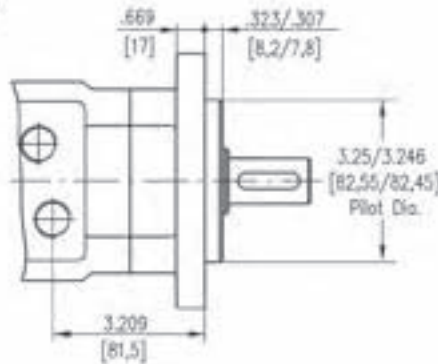


Version **4**

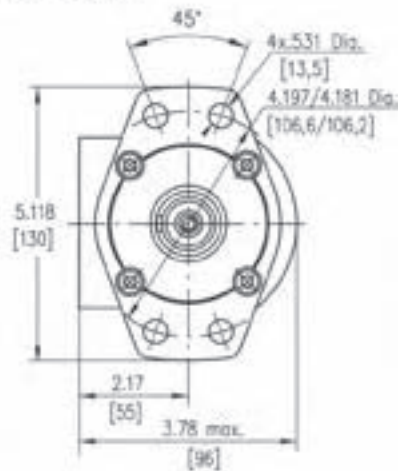
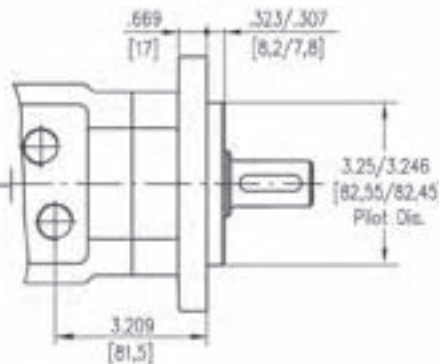


Mounting

Square Mount (4 Holes)



F Oval Mount (4 Holes)



| Type | Lmax, in.[mm] | L1, in.[mm] |
|-----------|---------------|-------------|
| MLHPL 50 | 5.83 [148] | .26[6,67] |
| MLHPL 80 | 5.98 [152] | .42[10,67] |
| MLHPL 100 | 6.10 [155] | .52[13,33] |
| MLHPL 125 | 6.22 [158] | .66[16,67] |
| MLHPL 160 | 6.42 [163] | .84[21,33] |
| MLHPL 200 | 6.61 [168] | 1.05[26,67] |
| MLHPL 250 | 6.89 [175] | 1.31[33,33] |
| MLHPL 315 | 7.24 [184] | 1.68[42,67] |
| MLHPL 400 | 7.68 [195] | 2.10[53,33] |

Standard Rotation

Viewed from Shaft End
Port A Pressurized - CW
Port B Pressurized - CCW

Reverse Rotation

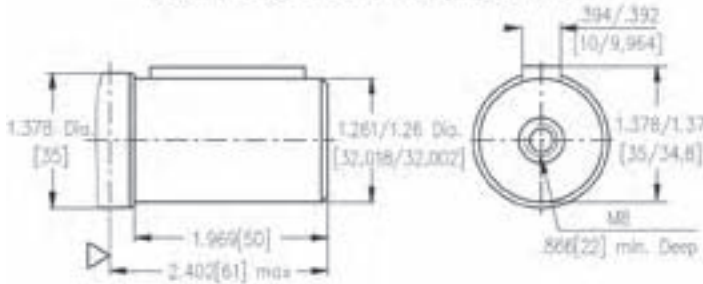
Viewed from Shaft End
Port A Pressurized - CCW
Port B Pressurized - CW

| | Versions | | |
|------------------------|----------|------------|-------------|
| | 2 | 4 | 5 |
| P_{max} | 2xG½ | 2x¼-14 UNF | 2x½-14 NPTF |
| T | G¼ | ¼-20 UNF | ¼-20 UNF |

SHAFT EXTENSIONS FOR MLHPL AND MLHRL

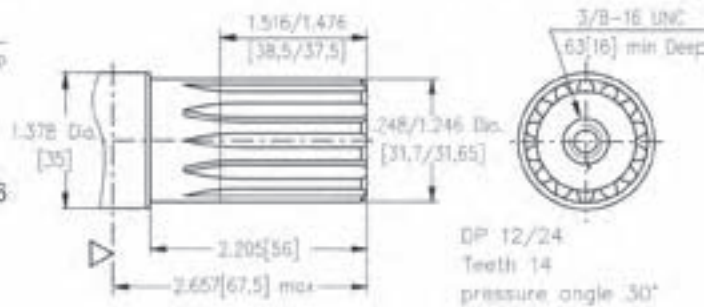
B

ø32 , Parallel key A10x8x40 DIN 6885
Max. Torque 6815 in-lb [77 daNm]



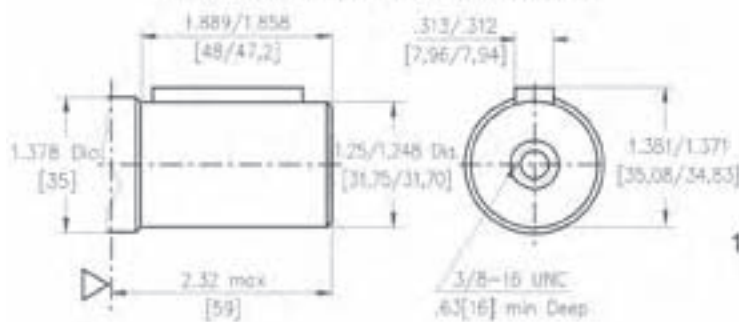
L

14T Splined, 1¼" [31,75], ANS B92.1-1976
Max. Torque 6815 in-lb [77 daNm]



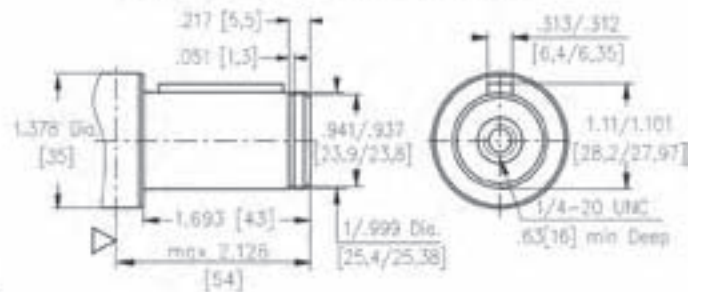
K

1¼" [31,75] straight, Parallel key ¼"x¼"x1¼" BS 46
Max. Torque 6815 in-lb [77 daNm]



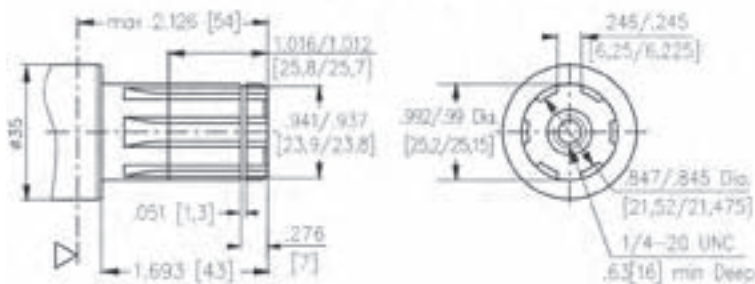
C

1" [25,4] straight, Parallel key ¼"x¼"x1¼" BS46
Max. Torque 3010 in-lb [34 daNm]



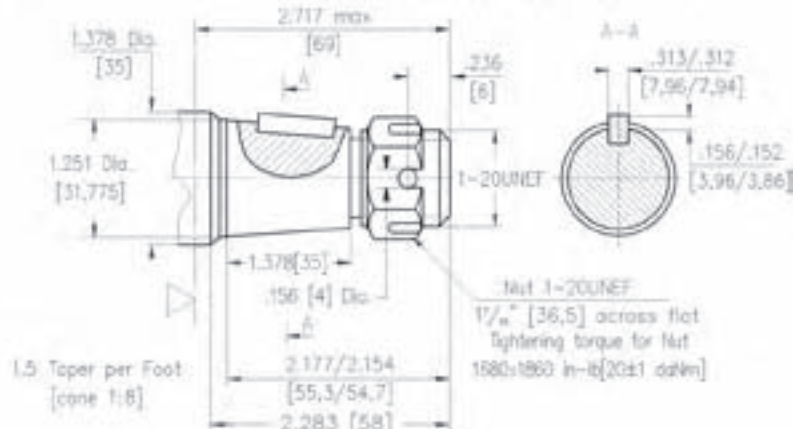
G

1" [25,4], Splined BS 2059 (SAE 6B)
Max. Torque 3010 in-lb [34 daNm]



R

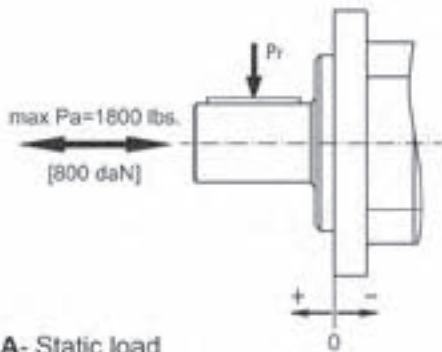
1¼" [31,75], SAE J501 Tapered
Parallel key ¼"x¼"x1"
Max. Torque 6815 in-lb [77 daNm]



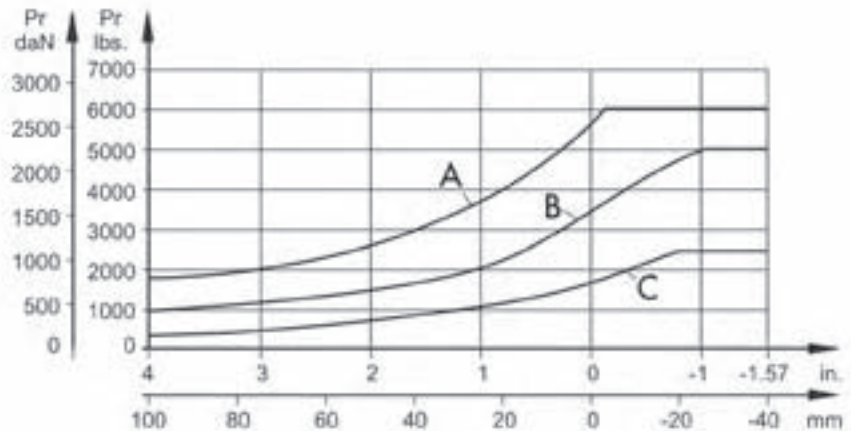
▽ - Motor Mounting Surface
 Requirement max. Torque must be not exceeded.



Permissible Shaft Loads FOR MLHPI AND MLHRL



- A- Static load
- B- Pa=450 lbs. [200 daN]
- C- Pa=1800 lbs. [800 daN]



ORDER CODE

| | | | | | | | |
|-------|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| MLHPL | | | | | | | |

Pos.1 - Mounting Flange

omit - Square mount, four holes

F - Oval mount, four holes

Pos.2 - Displacement code*

| | |
|------------|---|
| 50 | - 3.02 [49,5] in. ³ /rev. [cm. ³ /rev.] |
| 80 | - 4.83 [79,2] in. ³ /rev. [cm. ³ /rev.] |
| 100 | - 6.04 [99,0] in. ³ /rev. [cm. ³ /rev.] |
| 125 | - 7.55 [123,8] in. ³ /rev. [cm. ³ /rev.] |
| 160 | - 9.66 [158,4] in. ³ /rev. [cm. ³ /rev.] |
| 200 | - 12.1 [198,0] in. ³ /rev. [cm. ³ /rev.] |
| 250 | - 15.1 [247,5] in. ³ /rev. [cm. ³ /rev.] |
| 315 | - 19.3 [316,8] in. ³ /rev. [cm. ³ /rev.] |
| 400 | - 24.16 [396,0] in. ³ /rev. [cm. ³ /rev.] |

Pos.3 - Shaft Extensions**

| | |
|----------|--|
| B | - ø32 straight, Parallel key |
| K | - 1¼"[31,75] straight, Parallel key |
| L | - 1¼"[31,75] splined 14T ANS B 92.1-1976 |
| R | - 1¼"[31,75] tapered SAE J 501 |
| C | - ø25,4 straight, Parallel key |
| G | - ø25,4 splined BS 2059 (SAE 6B) |

Pos. 4 - Port Size/Type [standard manifold to each]

| | |
|----------|---|
| 2 | - side ports, 2xG1/2, G1/4, BSP thread, ISO 228 |
| 4 | - side ports, 2x7/8-14 UNF, O-ring, 7/16-20 UNF |
| 5 | - side ports, 2x1/2-14 NPTF, 7/16-20 UNF |

Pos. 5 - Special Features

| | |
|------------|-------------------|
| omit | - none |
| LL | - Low Leakage |
| LSV | - Low Speed Valve |
| FR | - Free Running |

Pos. 6 - Rotation

| | |
|----------|---------------------|
| omit | - Standard Rotation |
| R | - Reverse Rotation |

Pos. 7 - Option [Paint]**

| | |
|-----------|-----------------------------|
| omit | - no Paint |
| P | - Painted |
| PC | - Corrosion Protected Paint |

Pos. 8 - Design Series

| | |
|------|---------------------|
| omit | - Factory specified |
|------|---------------------|

NOTES: * See Function diagrams from page 19 to page 24.

** The permissible output torque for shafts must be not exceeded!

*** Color at customer's request.

The hydraulic motors are mangano phosphatized as standard.